



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

H'A

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,293	09/16/2003	Michel Doyon	10442-30US	9796
20988	7590	02/08/2007	EXAMINER	
OGILVY RENAULT LLP 1981 MCGILL COLLEGE AVENUE SUITE 1600 MONTREAL, QC H3A2Y3 CANADA			VERDI, KIMBLEANN C	
			ART UNIT	PAPER NUMBER
			2109	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/08/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/662,293	DOYON ET AL.	
	Examiner	Art Unit	
	Kacy Verdi	2109	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 16 September 2003.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-14 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-14 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 16 September 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date 8 July 2005.

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application
 6) Other: _____.

DETAILED ACTION

This office action is in response to the Application filed on September 16, 2003. Claims 1-14 are pending in the current application.

Information Disclosure Statement

1. The information disclosure statement filed July 8, 2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Objections

2. Applicant is advised that should claim 5 be found allowable, claims 10 and 14 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim.

See MPEP § 706.03(k).

3. Applicant is advised that should claim 6 be found allowable, claim 13 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim.

See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S.

Patent 5,903,752 to Dingwall et al. (hereinafter Dingwall).

6. As to claim 1, Dingwall teaches a computer system, a method for providing improved real time command execution in a non real time operating system, comprising:

executing at least one application at a user mode level of said computer system

(Windows™ Applications, 22, Fig. 2);

providing from said at least one application a sequence of asynchronous commands (application specific tasks, col. 4, lines 4-9, made up of events) to be executed in real time (Virtual Device Driver (VxD), 28, Fig. 2, supports real-time multi-

tasking, col. 3, lines 46-47);

storing said sequence of asynchronous commands in a command queue (real time tasks, 34, Fig. 2 and RT Event 36, Fig. 2) to be accessible from a privileged mode level of said computing system (Virtual Device Driver (VxD), 28, Fig. 2, run at most privileged level col. 3, lines 36-37); and

implementing one at a time each of said stored asynchronous commands (task executes until complete in interrupt mode, col. 5, lines 7-9).

7. As to claim 2, Dingwall teaches the method as claimed in claim 1, wherein a plurality of sequences of asynchronous commands is provided (application specific tasks, col. 4, lines 4-9, made up of events), each sequence being related to a corresponding application thread (task), further wherein said storing of a sequence of asynchronous commands is performed in a corresponding queue (real time tasks, 34, Fig. 2 and RT Event 36, Fig. 2) from the execution of said corresponding application thread queue (RT Task execution mode, Fig. 9).

8. As to claim 3, Dingwall teaches the method as claimed in claim 1, wherein a synchronous (real-time) command is added to said sequence of asynchronous commands, said application sleeping (application task is asleep (dormant/locked) until interrupted, 818, Fig. 8) until said synchronous command is executed (RT Scheduler 30, Fig. 2, releases scheduling lock which allows real-time tasks to pre-empt the current (asynchronous) process, col. 3, lines 59-61).

9. As to claim 4, Dingwall teaches the method as claimed in claim 2, wherein a synchronous command is added to said sequence of asynchronous commands, said application thread sleeping (application task is asleep (dormant/locked) until interrupted, 818, Fig. 8) until said synchronous command is executed (RT Scheduler 30, Fig. 2, releases scheduling lock which allows real-time tasks to pre-empt the current (asynchronous) process, col. 3, lines 59-61).

10. As to claim 5, Dingwall teaches the method as claimed in claim 1, wherein said non real time operating system is Microsoft Windows (environment of Windows™, col. 3, lines 33-34) and said step of storing is performed through execution of a driver routine

from a DLL file (Virtual Device Driver (VxD) is dynamic link library (DLL), col. 3, lines 33-36).

11. As to claim 6, Dingwall teaches the method as claimed in claim 5, wherein said step of providing involves said commands being pushed one at a time into said sequence through system call (interrupt occurs which causes the processor to switch to VxD interrupt mode and execute RT interrupt handler 32, Fig. 2, col. 4, lines 51-23, RT interrupt handler 32, Fig. 2, wake up associated real-time task).

12. As to claim 7, Dingwall teaches the method as claimed in claim 1, wherein one of said stored commands is a branch command to control the order of execution of said stored commands (RT scheduler 30, Fig. 2, schedules task preemptively by priority and allows interrupt handlers 32, Fig. 2, to make real-time tasks ready for execution without preemption, col. 3, lines 54-62).

13. As to claim 8, Dingwall teaches the method as claimed in claim 1, wherein said step of implementing is done at a different privileged mode level system (Virtual Device Driver (VxD), 28, Fig. 2, run at most privileged level col. 3, lines 36-37).

14. As to claim 9, Dingwall teaches the method as claimed in claim 8, wherein said different privileged level is that of the Interrupt Service Routine (Virtual Device Driver (VxD), 28, Fig. 2, which is interrupt driven, runs at most privileged level col. 3, lines 36-38), whereby the delay between the execution of successive commands is minimized (improves real-time response col. 2, line 49-50).

15. As to claim 10, Dingwall teaches the method as claimed in claim 9, wherein said non real-time operating system is Microsoft Windows (environment of Windows™, col. 3, lines 33-34).

16. As to claim 11, Dingwall teaches the method as claimed in claim 1, wherein said sequence of commands process the same data set (task needs to process data in buffer stored by audio/video device, col. 4, lines 59-60).

17. As to claim 12, Dingwall teaches the method as claimed in claim 11, wherein said same data set is a video camera image being captured and processed in real-time (task needs to process data in buffer stored by audio/video device, col. 4, lines 59-60)(example task used to perform capture or playback of audio/video, col. 4, lines 5-6).

18. As to claim 13, Dingwall teaches the method as claimed in claim 1, wherein said step of providing involves said commands being pushed one at a time into said sequence through a system call (interrupt occurs which causes the processor to switch to VxD interrupt mode and execute RT interrupt handler 32, Fig. 2, col. 4, lines 51-23, RT interrupt handler 32, Fig. 2, wake up associated real-time task).

19. As to claim 14, Dingwall teaches the method as claimed in claim 1, wherein said step of storing is performed through execution of a driver routine (Virtual Device Driver) from a system file (Virtual Device Driver (VxD) is dynamic link library (DLL), col. 3, lines 33-36).

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,721,922 discloses a method and apparatus for embedding a real-time multi-tasking kernel in a non-real-time operating system.

U.S. Patent 5,826,081 discloses a process scheduler or dispatcher for a multiprocessor system for real time applications.

U.S. Patent 5,842,015 discloses a hardware resource manager for real-time control of a hardware resource in a multiprocessing environment.

U.S. Patent 5,913,062 discloses an interface between one or more upper-level conferencing drivers of the conferencing system and one or more lower-level audio drivers of the conferencing system to isolate the conferencing drivers from the audio drivers.

U.S. Patent 6,779,182 B1 discloses a process scheduler or dispatcher for a multiprocessor system for real time applications.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kacy Verdi whose telephone number is (571) 270-1654. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm EST..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xiao Wu can be reached on (571) 272-7761. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2109

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KV
February 2, 2007



XIAO WU
SUPERVISORY PATENT EXAMINER